29579/KC15,929

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:
Timothy James Blenke et al

Serial Number: 09/651,042

Filed: 08/30/2000

For: TEAR-RESISTANT BOND PATTERN

Group Art Unit: 1771

Examiner: Elizabeth M. Cole

5/9/03

APPEAL BRIEF

Hon. Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Board of Appeals and Interferences

APPELLANTS' BRIEF (37 CFR §1.192)

This appeal brief is being submitted in furtherance of the Notice of Appeal filed on March 19, 2003 in the above identified application.

A check for the fee of $320.00 required under 37 CFR §1.17(c) is attached herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: COMMISSIONER FOR PATENTS, P.O. Box 1450, Alexandria, VA22313-1450

ON May 19, 2003.

Shelly Flunker
(Typed name of person mailing paper or fee)

Shelly Flunker
(SIGNATURE)

5/19/03

05/22/2003 AWONDAF1 00000088 09651042

01 FC:1402 320.00 OP

This brief contains these items under the following headings and in the order set forth below (37 CFR §1.192(c)):

I REAL PARTY IN INTEREST
II RELATED APPEALS AND INTERFERENCES
III STATUS OF CLAIMS
IV STATUS OF AMENDMENTS
V SUMMARY OF INVENTION
VI ISSUES
VII GROUPING OF CLAIMS
VIII ARGUMENTS
IX APPENDIX OF CLAIMS

I. REAL PARTY IN INTEREST

The real party in interest is

KIMBERLY-CLARK WORLDWIDE, INC.
401 N. LAKE ST.
NEENAH, WISCONSIN 54956

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS (37 CFR §1.192(c)(1))

The status of the claims in this application is:

The claims in the application are 1-77. Of these,

claims 28 and 71 have been canceled;

no claims have been withdrawn from consideration;

claims 1-27, 28-70, and 72-77 are pending;

no claims are allowed; and

claims 1-27, 29-70, and 72-77 are rejected.

The claims on appeal are claims 1-27, 29-70, and 72-77.

IV. STATUS OF AMENDMENTS (37 CFR §1.192(c)(2))

The first amendment, titled "Amendment A", filed October 15, 2002, in response to the First Office Action dated 07/08/2002, was entered.

The second amendment, titled "Amendment B", filed March 19, 2003, in response to the Second Office Action dated 12/19/2002, which was a Final Action, was not entered.

In view of the examiner's clarifying statements made in the Advisory Action dated 04/04/2003, applicants contemplated that the 35 U.S.C. 112 first paragraph issues could be resolved with further minor amendments to respective ones of the claims. Since the 35 U.S.C. 102(b) rejection was not repeated in the 04/04/2003 Advisory Action, applicants contemplate that this issue was resolved in Amendment B.

Accordingly, a third amendment, titled "Amendment B2", is being filed concurrently with this Appeal Brief in anticipation that the examiner will find the changes therein sufficient in substance, and not adding either new issues or new matter, such that the examiner will enter "Amendment B2" for purposes of appeal. In such case, "Amendment B2" will be have been entered by the time the appeal is sent to the Board of Appeals.

The remainder of this Appeal Brief is constructed on the expectation that Amendment B2 will be entered.

V. SUMMARY OF INVENTION (37 CFR §1.192(c)(3))

This invention relates to bonding together first and second thin-section elements of sheet material, typically in the process of making absorbent personal care articles containing such bonds. Either or both of the sheet materials can be continuous webs, or can be elements cut from thin-section e.g. continuous webs (page 2 lines 3-7).

The invention solves 2 problems. First, typical bond patterns wherein the bond elements are e.g. dots arrayed in a regular pattern of rows and lines retain a high fraction of a force, which enters the bond pattern from a side edge of the bond pattern, at the edge of the bond pattern, and do not distribute the force well to the bond elements which are disposed inwardly of the outer row of bond elements. Such concentration of the force at the edge of the bond pattern can cause failure of the bond at the edge of the bond pattern, at a force intensity level which is lower than the force the bond could take if the force were better distributed through the width of the bond pattern. Such failure at the edge of the bond pattern typically propagates along the edge of the bond pattern. Such edge-related propagation of failure of the bond pattern is commonly known as "zippering" [open] of the bond pattern.

However, as in the invention, if adjacent bond elements, especially toward the interior of the bond pattern, were to receive, and assist in dissipating, a greater portion of the force, the force concentration at the outer edge of the bond pattern would be reduced commensurately, whereby the bond pattern could tolerate overall greater levels of force without failing (specification page 2 lines 14-21).

In addition, while the above two paragraphs address the bond pattern itself, such distribution of the force to adjacent bond elements also increases the level of force which can be applied without failure of the sheet materials which are bonded together by the bond pattern. (page 2 lines 14-21).

In the second problem solved by the invention, where the bond pattern is not a uniform array of bone elements in rows and lines, side-to-side irregularities in the bond pattern can cause pressure variations at the nip when the bond is formed, with resulting chatter and vibration in the bonding nip. Such chatter and vibration can be based on longitudinal variations, or side-to-side variations, in bond contact surface at the nip. Such variations, with the resulting vibration and/or chatter at the nip, can result in defective bonds being formed, and in premature wear of the nip elements which participate in creating the bonds (page 2 line 22 to page 3 line 2).

The basic concept of the invention is to provide improved bond patterns which better distribute forces which are imposed on the bond pattern during use of the article in which the bonds are employed. The forces of specific interest are those forces which are imposed at a side edge of the bond pattern, as illustrated at 90 in FIGURE 1A. Bond patterns of the invention are designed to receive such force at the edge of the bond pattern, and to distribute substantial portions of such force inwardly into the interior of the bond pattern (page 23 lines 10-27).

The force distribution is accomplished by arranging a first sub-array of bond elements 12 at the edges of the bond pattern, and a second sub-array of bond elements 14 which are positioned between the first sub-array and the longitudinal axis 20 of the bond pattern. In general, the elements 14 of the second sub-array are positioned closer to the respective elements 12 of the first array than the distance between respective ones of the bond elements 12. As a result, a force imposed at the side of the bond pattern passes, element-to-element, preferentially to elements of the second sub-array, rather than to adjacent elements of the first sub-array.

In addition to the elements of the second sub-array being disposed inwardly of the elements of the first sub-array, the elements of the second array are preferable disposed at acute angles to the longitudinal axis which direct the force inwardly toward the longitudinal axis, where the force can be further passed to other elements of the bond pattern.

A third sub-array of bond elements 13 (FIGURE 1B) can be positioned to receive the forces from the second sub-array of bond elements, whereby the third sub-array of bond elements further assists in dissipating a force imposed at a side of the bond pattern.

Illustrative flow of elements of a force 90 from the edge of the bond pattern into the interior of the bond pattern is shown by dashed lines 92 in FIGURE 1A.

In the terminology of the specification, elements of the first sub-array of bond elements 12, which typically initially receive the force at the side of the bond pattern, are called stress receptor elements.

Elements of the second sub-array of bond elements 14, which typically receive the force from the first sub-array of bond elements 12, are called stress transfer and dissipation elements in the specification.

Elements of the third sub-array of bond elements 13, which receive the force from the second sub-array of bond elements, are called stress termination elements in the specification.

By so designing the bond pattern to direct stresses/forces toward the interior of the bond pattern, the tendency to pass the stresses to adjacent bond elements along the side edge of the bond pattern, and the resulting tendency of the bond pattern to respond by zippering, or otherwise failing at the edge of the bond pattern, is reduced.

VI. ISSUES (37 CFR §1.192(c)(4))

The following issues are set forth by the examiner in the Office Action dated 12/19/2002.

1. Whether *bond element contact lengths*, Claim 7, are adequately disclosed in the specification and drawings.
2. Whether the claims contain subject matter which is not enabled by the specification; namely whether the specification teaches how to make/use *stress receptor, transfer, dissipation and termination elements* and whether the specification defines the *amount, direction or type of stress* which is applied to the bonded material.
3. Whether the claims describe the bond elements in terms of *how they interact with a stress*, or whether the terminology used in naming the respective bond elements is merely clarifying of the roles typically played by the respective types of bond elements.
4. Whether *third area of the bond pattern* in Claim 1 is indefinite.
5. Whether stating bonds are *activated*, in Claim 7, is indefinite.
6. Whether Claims 1-6, 30-34, and 73-77 are anticipated by McCormack et al, WO 99/14415.

VII. GROUPING OF CLAIMS (37 CFR §1.192(c)(5))

Respective ones of the claims are patentably distinct from each other such that the claims stand or fall in separate and distinct groups, as follows:

Claims 1-6 stand or fall together;

Claims 7-19 and 41-62 stand or fall together;

Claims 20-27 and 29 stand or fall together;

Claims 30-34 and 73-77 stand or fall together;

Claims 35-40 stand or fall together;

Claims 63-70 and 72 stand or fall together.

VIII. ARGUMENT (37 CFR §1.192(c)(6))

The structure of this argument is built on the framework of the statement of the issues.

1. Whether *bond element contact lengths*, Claim 7, are adequately disclosed in the specification and drawings.

The specification as originally filed disclosed contact lengths at page 21 lines 17-23. Contact lengths were originally disclosed at (84) in FIGURE 4. Composites of the contact lengths were originally disclosed in table format in FIGURE 5, and in graph format in FIGURE 6. The specification was amended in Amendment B, and has now been amended in Amendment B2, to specifically recite bond element contact lengths.

In the Advisory Action mailed 04/04/2003, the examiner acknowledged that this issue had been resolved in Amendment B. Accordingly, contemplating that Amendment B2 will be entered, this issue should now be a moot issue for the Board of Appeals.

2. Whether the claims contain subject matter which is not enabled by the specification; namely whether the specification teaches how to make/use *stress receptor, transfer, dissipation and termination elements* and whether the specification defines the *amount, direction or type of stress* which is applied to the bonded material.

Claims 1-77 stand rejected under 35 U.S.C. §112 1st Paragraph. The examiner asserts that the specification does not disclose the structure of the stress receptor, transfer, dissipation and termination elements, does not define the amount, direction or type of stress which is applied to the composite material, and therefore does not disclose how to make/use the claimed invention.

The elements claimed, as originally named, are stress receptor elements (12, transfer and dissipation elements (14), and stress termination elements (13). At no time have applicants claimed transfer elements, or dissipation and termination elements as implied in the Official Actions.

Contrary to the examiner's statement, the specification does teach how to make and use the claimed invention. Examples of the structures (shape, relative size, location, orientation, etc.) of the respective bond elements are well disclosed in the plan view layouts of the respective elements in FIGURES 1A, 1B, and 2, in combination with the teaching of the materials which are used in making such bonds

(page 14 line 7 to page 15 line 26), how to make the bonds (page 18 lines 7-24), and the statement (page 13 line 12) that the bond elements unite the sheets, as well as the teaching (page 23 lines 10-27) regarding how the bond elements respond to stresses such as stress 90 (FIGURE 1A).

As to the amount of stress which is applied to the composite material, the stress referred to is stress which is imposed on the material in anticipated use. The amount of stress imposed at use depends on the specific nature of the use, and has no bearing on enabling a user to make and use the invention. As with any article of commerce which is exposed to physical stresses, the article does not derive its identity from the stress to which it is exposed. Thus, by teaching how product of the invention is made, as above, and illustrating an exemplary use as in FIGURE 2, the public is well enabled to put the invention to use.

The examiner asserts that the specification does not limit the source or direction from which stress is imposed. Applicants point out that the specification does teach exemplary stress 90 as being imposed on the bond pattern at a side edge 18. As to the X, Y, or Z direction of the stress, applicants contemplate no limits to the direction or source from which such stress can originate. Indeed, the direction or level of stress is not part of the invention, other than that the bond patterns of the invention increase ability of a given material combination to tolerate stresses which enter the bond pattern at the side edges of the bond pattern.

The examiner has further rejected all claims as defective under 35 U.S.C. 112 1st paragraph for lack of teaching how to make and use the claimed invention. The examiner directs attention to the relationships between the bonds and their structures, and stresses which may be imposed on such bonds. Applicants point out that independent Claims 1, 7, 35 and 41 make no mention of any relationship between the recited structure of the bonded composite and any stress which may be imposed on such bonded composite whereby applicants assert there is not even a remote basis for such assertion by the examiner as to these claims. Thus, at least as to Claims 1, 7, 35, and 41, the examiner's rejection is absolutely without basis, and cannot stand.

The remaining independent claims, namely Claims 20, 30, 63, and 73, prior to entry of Amendment B2, clearly teach interaction between the bonded composite and stresses, which is focus of the invention as taught throughout the specification and shown in the drawings, specifically at numerals 90 and 92 in FIGURE 1A. Since the

specification and claims are consistent with respect to each other, the examiner's rejection is without basis and cannot stand.

As indicated in the Remarks section of Amendment A, the stress is not the invention. The invention is in a bonded composite of at least first and second flexible sheet materials, optionally incorporated into an absorbent personal care article. How to make such bonded composite is taught. The specification further describes an exemplary such personal care article in the form of a diaper illustrated in FIGURE 2. Exemplary orientation and layout of respective bond patterns, as well as exemplary bond/stress interaction, are shown in FIGURES 1A and 1B.

Accordingly, the examiner's statement of lack of enablement is without merit on its face as the specification fully enables the public to make and use the claimed invention. Thus, the examiner's rejection under 35 U.S.C. §112 first paragraph is in error and should be reversed.

In the Advisory Action dated 04/04/2003, the examiner stated that Amendment B, submitted 3/19/2003, did not place the application in condition for allowance because: All the independent claims make mention of the relation between bonds and stresses which may be imposed on such bonds because each of the bond elements is named in accordance to how it interacts with a stress [emphasis added].

As a matter of clarification, independent Claims 35 and 41, even before Amendment B, contained no such "naming" relationship, though claims depending from Claims 35 and 41 did contain such relationships.

In order to resolve this issue, all claims containing such name/interaction relationships were amended in Amendment B2 to delete such relationships. Thus, bond elements (12) which were previously recited in the claims as *stress receptor elements* are referred to in Amendment B2, as ones of a first sub-array of bond elements. Also, bond elements (14) which were previously recited as *transfer and dissipation elements* are referred to, in Amendment B2, as ones of a second sub-array of bond elements.

In addition, dependent Claims 28 and 71, which contained only functional, stress-response type limitations, were canceled in Amendment B2.

Applicants' first direction of argument is that the claims before amendment B2 are clear in that the names employed for the respective bond elements are sufficiently disclosed in the specification and drawings to support the claims; and that the particular naming regimen is itself clarifying of the nature and scope of the claims.

Applicants' second direction of argument is that, after entry of Amendment B2, any assertion of lack of support, on the basis of naming of bond elements in the claims, is rendered moot by the removal of all such descriptive nomenclature from the claims.

Applicants submit that, upon entry of Amendment B2, the rejection, under 35 U.S.C. 112 1st Paragraph, which is based on applicants' naming of the respective bond elements to reflect how they typically interact with a stress, is rendered moot and should be reversed.

Thus, whether or not Amendment B2 is entered, the rejection under 35 U.S.C 112 1st paragraph is without basis and should be reversed.

3. Whether the claims describe the bond elements in terms of *how they interact with a stress* (examiner's position), or whether the terminology used in naming the respective bond elements is merely clarifying of the roles typically played by the respective types of bond elements (applicants' position).

The examiner asserts that the specification does not disclose the structure of the stress receptor, transfer, dissipation and termination elements, does not define the amount, direction or type of stress which is applied to the composite material, and therefore does not disclose how to make/use the claimed invention.

Even though nearly all functional language has been deleted from the claims, the examiner persists in asserting that the claims continue to describe the bond elements in terms of how they interact with a stress element. Contrary to the examiner's assertion, even before Amendment B2, the claims contain precious little functional language regarding interaction between the bond elements and a stress. The only wording relating the bond elements to how they interact with a stress is the naming regimen used for naming the various bond elements.

Thus, the bond elements 12 which typically are the first bond elements to receive an imposed stress, are named <u>stress receptor elements</u>.

The bond elements 14 which typically receive a stress from the stress receptor elements, and whose typical primary effect is to transfer the stress toward the interior of the bond pattern, and to assist in dissipating the stress in the interior of the bond pattern, are named <u>stress transfer and dissipation elements</u>.

Along the same line of thinking, the optional bond elements 13, to the extent used, generally receive the stress from the stress transfer and dissipation elements, and assist in dissipating the stress in the interior of the bond pattern. For many imposed stresses, bond elements 13 are the last in the line of bond elements which provide substantial assistance in dissipating the stress such that distribution of the stress terminates with bond elements 13. Accordingly, bond elements 13 are named stress termination elements.

Thus, applicants submit that the naming format used to name the respective sub-arrays of bond elements is instructive to the reader and clearly and easily distinguishes the respective sub-arrays of bond elements from each other, thereby clearly defining the scope of the invention, while operating clearly within the description of such bonds, and how to make and use them, as taught in the specification.

As indicated in Amendment A, the stress is not the invention. The invention is in a bonded composite of at least first and second flexible sheet materials, optionally incorporated into an absorbent personal care article. How to make and use such bonded composite is taught in the specification. The specification further describes an exemplary such personal care article in the form of a diaper illustrated in FIGURE 2. Exemplary orientation and layout of respective bond patterns, as well as exemplary bond/stress interaction, are shown in FIGURES 1A and 1B.

Accordingly, the examiner's statement of lack of enablement is without merit on its face as the specification fully enables the public to make and use the claimed invention. Thus, the examiner's rejection under 35 U.S.C. §112 first paragraph is in error and must be withdrawn.

In the Advisory Action dated 04/04/2003, the examiner stated that Amendment B, submitted 3/19/2003 did not place the application in condition for allowance because: All the independent claims make mention of the relation between bonds and stresses which may be imposed on such bonds because each of the bond elements is named in accordance to how it interacts with a stress [emphasis added].

As a matter of clarification, independent Claims 35 and 41, even before Amendment B, to which the examiner was responding, contained no such "naming" relationship, though claims depending from Claims 35 and 41 did contain such relationships.

In order to resolve this issue, all claims containing such name/interaction relationships were amended in Amendment B2 to delete such relationships. Thus, bond elements (12) which were previously recited in the claims as *stress receptor elements* are referred to in Amendment B2, as ones of a first sub-array of bond elements. Also, bond elements (14) which were previously recited as *transfer and dissipation elements* are referred to, in Amendment B2, as ones of a second sub-array of bond elements.

Dependent Claims 28 and 71, which contained only functional, stress-response type limitations, were canceled in Amendment B2.

Applicants' first direction of argument is that the claims before amendment B2 are clear in that the names employed for the respective bond elements are sufficiently disclosed in the specification and drawings to support the claims; and that the particular naming regimen is itself clarifying of the nature and scope of the claims.

Applicants' second direction of argument is that, after entry of Amendment B2, any assertion of lack of support, on the basis of naming of bond elements in the claims, is rendered moot by the removal of all such descriptive nomenclature from the claims.

Applicants submit that, upon entry of Amendment B2, the rejection, under 35 U.S.C. 112 1st Paragraph, which is based on applicants' naming of the respective bond elements to reflect how they typically interact with a stress, is rendered moot since there are no longer any descriptive names associated with any of the bond elements.

Thus, whether or not Amendment B2 is entered, the rejection under 35 U.S.C 112 1st paragraph is without basis and should be reversed.

4. Whether *third area of the bond pattern* in Claim 1 is indefinite.

Claim 1 defines a first area *of the first flexible sheet material*, and a second area *of the second flexible sheet material*. The paragraph after subparagraph (b) recites a third area *of the bond pattern*, which the examiner rejects as indefinite.

As a first direction of argument, applicants submit that the area of the bond pattern is well illustrated in e.g. FIGURES 1A and 1B, as well as being well discussed in the specification in terms of width "W" of the bond pattern. See, for example, page 9 line 8 of the specification. Therefore, the rejection is without basis and should be reversed.

As a second direction of argument, Claim 1 has been amended by Amendment B2 to drop the offending language *of the bond pattern*, as suggested by the examiner at page 5 of the Official Action dated 12/19/2002, whereby the offending language has been removed from the claim. Whichever version of Claim 1 is considered, the rejection is without basis and should be reversed.

5. Whether stating bonds are *activated*, in Claim 7, is indefinite.

The examiner rejected the term *activated*, page 8 of the 12/19/2002 Official Action, stating that such term implies that there are potential bonds but not actual bonds. Applicants refer to the specification at page 17 lines 18-28 which refers to activating a desired form of adhesion. The specification teaches a variety of ways of forming the bonds, such as thermal forming, ultrasonic bond forming, and chemical adhesives (specification page 18 line 7-23). Where chemical adhesive is in fact used, the chemical adhesive can be coated onto a portion of the sheet material large enough to represent at least the full width of the bond pattern, and then *activated* by the application of nip pressure, with or without thermal energy or ultrasonic energy assist.

Within the same context, the types of polymeric materials mentioned for use in the sheet materials are themselves thermoplastic materials which can be *activated*, anywhere on the respective sheet material, thereby to form bonds by the application of heat. Such heat can be applied in the form of a transfer of heat energy from a heat source, or by in situ generation of heat in the material as by application of ultrasonic energy.

Thus, whatever heat source is used, when the exemplary materials are used, such materials inherently bear latent ability to form bonds, whereby the bonds are indeed latent in all overlapping areas of the sheet material.

Accordingly, the invention does indeed contemplate a latent bond, but within the context of selectively activating only a portion of the area which contains the latent bond. So indeed, activation of a bond includes both the forming of the bond, and the elevating of latent activity in the material employed in making the bond.

In order to resolve this issue, Amendment B2 has replaced the term *activated* with the term formed which the examiner stated is effective to resolve the issue (Advisory dated 04/04/2002, page 2 paragraph 2).

6. Whether Claims 1-6, 30-34, and 73-77 are anticipated by McCormack et al, WO 99/14415.

Claims 1-6, 30-34, and 73-77 stand rejected as unpatentable over McCormack et al, WO 99/14415.

The examiner stated (Official Action dated 12/19/2002) that the bond elements which are at the perimeter of the McCormack et al structure correspond to applicants' stress receptor elements 12; and that the bond elements which are disposed within the perimeter of the bond pattern of McCormack correspond to applicants' transfer and dissipation elements.

Applicants have clearly distinguished stress receptor elements and transfer and dissipation elements from each other in the specification, in terms of the respective separate and distinct physical features, as well as orientation of the stress transfer and dissipation elements. The examiner has shown no such separate and distinguishing features distinguishing the such elements from each other in the reference. Further, the various claims attach various size, shape, and orientation attributes to both the stress receptor elements and the transfer and dissipation elements in applicants' claims. Thus, the examiner's assertion was without basis when asserted.

In order to move the case toward allowance, the claims were amended in Amendment A to recite that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern.

A key feature of the invention is that stresses received at the side edges of the bond pattern are dissipated with improved efficiency through implementation of bond patterns of the invention. Thus, an unbonded portion of at least one of the sheet materials is a necessary feature of the invention.

The reference does not teach or suggest such stress transfer and dissipation structure, whereby the reference is defective to teach or suggest the invention as claimed.

Since Amendment A has been entered, since the issue was reargued by applicants in Amendment B, since the issue was not re-raised by the examiner in the Advisory Action, since the rejection is without basis on the merits, any remaining rejection on this issue should be reversed.

IX. APPENDIX OF CLAIMS (37 CFR §1.192(c)(7))

1. A bonded composite, comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces, said first flexible sheet material being suitable for use in a personal care absorbent article;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces, said second flexible sheet material being suitable for use in a personal care absorbent article; and

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is defined, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

(d) as ones of said bond elements, a first sub-array of longitudinally-oriented separate and distinct bond elements disposed proximate the side edges

of the bond pattern, and spaced at first distances from each other along the length of the bond pattern, the side edges of the bond pattern being defined generally between outwardly-disposed sides of sequentially-adjacent ones of said first sub-array of bond elements, and

(e) as ones of said bond elements, a second sub-array of longitudinally-oriented separate and distinct bond elements disposed inwardly of the side edges and inwardly of the first sub-array of bond elements, and at second distances from the first sub-array of bond elements less than the spacing of respective ones of the first sub-array of bond elements from each other.

2. A bonded composite as in Claim 1, respective ones of said second sub-array of bond elements having first ends disposed on the interior portion of the bond pattern, and extending to second ends adjacent the side edges of the bond pattern between respective ones of said first sub-array of bond elements.

3. A bonded composite as in Claim 1 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

4. A bonded composite as in Claim 1 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

5. A bonded composite as in Claim 1 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

6. A bonded composite as in Claim 1 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

7. A bonded composite, comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces, said first flexible sheet material being suitable for use in a personal care absorbent article;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces, said second flexible sheet material being suitable for use in a personal care absorbent article, and being bonded to the first flexible sheet material by bond elements defining an elongate bond pattern, the elongate bond pattern having regularly repeating bond segments along a length thereof, the bond elements in each bond segment being spaced from each other according to a pattern of bond elements common to the respective bond segments,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is defined, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other, ones of said bond elements extending across the width of said bond pattern, from loci proximate the side edges, at angles of between about 10 degrees and about 65 degrees with respect to the longitudinal axis,

a bond width being defined by a distance between the first and second side edges perpendicular to the longitudinal axis, including spaces between bond elements, at any point along the length of the pattern, such bond width extending along the pattern width, bond element contact lengths being correspondingly defined along the bond width, the composite of the bond element contact lengths along a respective bond width defining a composite contact length for the respective bond width, the composite contact length, taken at equally spaced intervals along the length of the bond pattern, defining an average composite contact length, the composite contact length at a given point along the length of the pattern varying from the average composite contact length by no more than about 13 percent.

8. A bonded composite as in Claim 7, the composite bond element contact length, at any point along the length of the pattern, varying from the average composite bond element contact length by no more than about 10 percent.

9. A bonded composite as in Claim 7, the composite bond element contact length, at any point along the length of the pattern, varying from the average composite bond element contact length by no more than about 8 percent.

10. A bonded composite as in Claim 7, said bond pattern comprising

(i) as first ones of said bond elements, a first sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, proximate the side edges of the bond pattern, and

(ii) as second ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having spaced first and second ends, and legs extending from the respective ends toward each other and outwardly of the longitudinal axis along the length of the bond pattern to outwardly-disposed portions of said legs between respective ones of said first sub-array of bond elements.

11. A bonded composite as in Claim 10, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of the bond elements of said first sub-array of bond elements on a given side of the bond pattern, also including, on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of the bond elements of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 70 percent, up to 100 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective one of the bond elements of said first sub-array of bond elements or opposing one of the bond elements of said second sub-array of bond elements during formation of the bond pattern.

12. A bonded composite as in Claim 10, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of the bond elements of said first sub-array of bond elements on a given side of the bond pattern, also including on

the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 75 percent, up to 90 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

13. A bonded composite as in Claim 10, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of the bond elements of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 80 percent, up to 85 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said bond elements of said first sub-array of bond elements or opposing ones of said bond elements of said second sub-array of bond elements during formation of the bond pattern.

14. A bonded composite as in Claim 7 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

15. A bonded composite as in Claim 7 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

16. A bonded composite as in Claim 7 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

17. A bonded composite as in Claim 7 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

18. A bonded composite as in Claim 7 wherein ones of said bond elements of said second sub-array of bond elements extend from loci proximate the side edges to loci proximate the longitudinal axis.

19. A bonded composite as in Claim 7 wherein increases and decreases in power distribution across the width of the bond pattern, as the bond pattern is being formed, define variations in composite contact lengths as compared to the average composite contact length for a given bond pattern for at least a complete circumferential rotation of a rotary anvil, wherein variations in composite contact lengths of the bond pattern reflect no more than about 13 percent of the average composite contact length of the bond pattern throughout the complete circumferential anvil rotation.

20. A bonded composite, comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area

of said first flexible sheet material, and a first web interior between the first and second major surfaces, said first flexible sheet material being suitable for use in a personal care absorbent article;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces, said second flexible sheet material being suitable for use in a personal care absorbent article; and

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is defined, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

(d) as ones of said bond elements, a first sub-array of longitudinally-oriented separate and distinct bond elements disposed along the length, and proximate the side edges of, the bond pattern, the side edges of the bond pattern being defined generally between outwardly-disposed sides of sequentially-adjacent ones of said first sub-array of bond elements, and

(e) as ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the

length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having spaced first and second ends, and legs extending from the respective first and second ends toward each other and outwardly of the longitudinal axis along the length of the bond pattern to outwardly-disposed portions of said legs, joined to each other, between said ones of said first sub-array of bond elements.

21. A bonded composite as in Claim 20, said ones of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 70 percent, up to 100 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

22. A bonded composite as in Claim 20, said ones of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along

the respective imaginary contact line spanning the width of the bond pattern represents at least about 75 percent, up to 90 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

23. A bonded composite as in Claim 20, said ones of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said one of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 80 percent, up to 85 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

24. A bonded composite as in Claim 20 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

25. A bonded composite as in Claim 20 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

26. A bonded composite as in Claim 20 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

27. A bonded composite as in Claim 20 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

29. A bonded composite as in Claim 20 wherein ones of said second sub-array of bond elements extend from loci proximate the side edges to loci proximate the longitudinal axis.

30. A bonded composite, comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces, said first flexible sheet material being suitable for use in a personal care absorbent article;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces, said second flexible sheet material being suitable for use in a personal care absorbent article; and

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is formed, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

(d) as ones of said bond elements, a first sub-array of longitudinally-oriented separate and distinct bond elements disposed along the length of, and proximate the side edges of, the bond pattern, the side edges of the bond pattern being defined generally between outwardly-disposed sides of sequentially-adjacent ones of said first sub-array of bond elements, and

(e) as ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements spaced along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having first ends disposed on the interior of the bond pattern, said respective ones of said second sub-array of bond elements extending to second ends adjacent the side edges of the bond pattern between respective ones of said first sub-array of bond elements.

31. A bonded composite as in Claim 30 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

32. A bonded composite as in Claim 30 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

33. A bonded composite as in Claim 30 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

34. A bonded composite as in Claim 30 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

35. A bonded composite, comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces, said first flexible sheet material being suitable for use in a personal care absorbent article;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces, said second flexible sheet material being suitable for use in a personal care absorbent article, and being bonded to the first flexible sheet material by bond elements defining an elongate bond pattern, the elongate bond pattern having regularly repeating bond segments along a length thereof, the bond

elements in each bond segment being spaced from each other according to a pattern of bond elements common to the respective bond segments,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is defined, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate and distinct elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

a bond width being defined by the width of the pattern perpendicular to the longitudinal axis, including spaces between bond elements, at any point along the length of the pattern, such bond width extending along the pattern width, bond element contact lengths being correspondingly defined along the bond width, the composite of the bond element contact lengths along a respective bond width defining a composite contact length for the respective bond width, the composite contact length, taken at equally spaced intervals along the length of the bond pattern, defining an average composite contact length,

a steady power distribution across the width of the bond pattern, as the bond pattern is being formed, defining minimum variations in composite contact lengths as compared to the average composite contact length for the bond pattern for at least a complete circumferential rotation of a rotary anvil reflecting the bond pattern, wherein variations in composite contact lengths of the bond pattern reflect no more than about 13 percent of the average composite contact length of the bond pattern throughout the complete circumferential anvil rotation.

36. A bonded composite as in Claim 35, the composite contact length, at any point along the length of the pattern, varying from the average composite contact length by no more than about 10 percent.

37. A bonded composite as in Claim 35, said bond pattern comprising

(i) as first ones of said bond elements, a first sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, proximate the side edges of the bond pattern, and

(ii) as second ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having spaced first and second ends, and legs extending from the respective ends toward each other and outwardly of the longitudinal axis along the length of the bond pattern to outwardly-disposed portions of said legs between said ones of said first sub-array of bond elements.

38. A bonded composite as in Claim 37, ones of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 70 percent, up to 100 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective

ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

39. A bonded composite as in Claim 37, ones of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 75 percent, up to 90 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

40. A bonded composite as in Claim 35 wherein ones of said second sub-array of bond elements extend from loci proximate the side edges to loci proximate the longitudinal axis.

41. An absorbent article having a front portion and a rear portion, and a crotch portion extending between said front portion and said rear portion, said absorbent article comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces; and

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern, and

(d) an absorbent core disposed adjacent at least one of said first and said second flexible sheet materials,

the bond pattern having a pattern length and including a central longitudinal axis, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is formed, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other, ones of said bond elements extending across the width of said bond pattern, from loci proximate the side edges, at angles of between about 10 degrees and about 65 degrees with respect to the longitudinal axis,

a bond width being defined across the width of the bond pattern perpendicular to the longitudinal axis, including spaces between bond elements, at any point along the length of the pattern, such bond width extending along the pattern width, bond element contact lengths being correspondingly defined along the bond width, the composite of the bond element contact lengths along a respective bond width defining a composite contact length for the respective bond width, the composite contact length, taken at equally spaced intervals along the length of the bond pattern, defining an average composite contact length, the composite contact length at a given point

along the length of the pattern varying from the average composite contact length by no more than about 13 percent.

42. An absorbent article as in Claim 41, the composite contact length, at any point along the length of the pattern, varying from the average composite contact length by no more than about 10 percent.

43. An absorbent article as in Claim 41, the composite contact length at any point along the length of the pattern, varying from the average composite contact length by no more than about 8 percent.

44. An absorbent article as in Claim 41, said bond pattern comprising

(i) a first sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, proximate the side edges of the bond pattern, and

(ii) a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having spaced first and second ends, and legs extending from the respective ends toward each other and outwardly of the longitudinal axis along the length of the bond pattern to outwardly-disposed portions of said legs between said ones of said first sub-array of bond elements.

45. An absorbent article as in Claim 44, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of

the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 70 percent, up to 100 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

46. An absorbent article as in Claim 44, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a said bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 75 percent, up to 90 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

47. An absorbent article as in Claim 44, said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding one of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the

respective imaginary contact line spanning the width of the bond pattern represents at least about 80 percent, up to 85 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

48. An absorbent article as in Claim 41 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

49. An absorbent article as in Claim 41 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

50. An absorbent article as in Claim 41 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

51. An absorbent article as in Claim 41 wherein said first flexible sheet material comprises an outer cover, wherein said second flexible sheet material comprises a body side liner, and wherein at least one of said outer cover and said body side liner comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and mixtures, copolymers, and blends of said polymeric materials.

52. An absorbent article as in Claim 41 wherein said second flexible sheet material comprises a body side liner and wherein said body side liner comprises

material selected from the group consisting of porous foams, reticulated foams, apertured polymeric films, polymeric fibers, and natural fibers.

53. An absorbent article as in Claim 51 wherein said body side liner comprises one or more of a mixture of materials selected from the group consisting of porous foams, reticulated foams, apertured polymeric films, polymeric fibers, and natural fibers.

54. An absorbent article as in Claim 41, the length of said bond pattern extending from the front portion of said absorbent article to the rear portion of said absorbent article.

55. An absorbent article as in Claim 41 wherein the crotch portion of said absorbent article is devoid of said bond pattern.

56. An absorbent article as in Claim 41, the width of said bond pattern between the first and second side edges being about 4 millimeters to about 20 millimeters.

57. An absorbent article as in Claim 41, the width of said bond pattern between the first and second side edges being about 5 millimeters to about 14 millimeters.

58. An absorbent article as in Claim 41 wherein said absorbent article comprises a feminine hygiene article.

59. An absorbent article as in Claim 41 wherein said absorbent article comprises a diaper.

60. An absorbent article as in Claim 41 wherein said absorbent article comprises an adult incontinence product.

61. An absorbent article as in Claim 41 wherein ones of said second sub-array of bond elements extend from loci proximate the side edges to loci proximate the longitudinal axis.

62. An absorbent article as in Claim 41 wherein increases and decreases in power distribution across the width of the bond pattern, as the bond pattern is being formed, can be defined by variations in composite contact lengths as compared to the average composite contact length for a given bond pattern for at least a complete circumferential rotation of a rotary anvil, wherein variations in composite contact lengths of the bond pattern reflect no more than about 13% of the average composite contact length of the bond pattern throughout the complete circumferential anvil rotation.

63. An absorbent article having a front portion and a rear portion, and a crotch portion extending between said front portion and said rear portion, said absorbent article comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the first and second major surfaces;

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern, and

(d) an absorbent core disposed adjacent at least one of said first and said second flexible sheet materials,

the bond pattern having a pattern length and including a central longitudinal axis, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is formed, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

(e) as ones of said bond elements, a first sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of, and proximate the side edges of, the bond pattern, and

(f) as ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having spaced first and second ends, and legs extending from the respective first and second ends toward each other and outwardly of the longitudinal axis along the length of the bond pattern to outwardly-disposed portions of said legs between ones of said first sub-array of bond elements.

64. An absorbent article as in Claim 63, said bond elements of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 70 percent, up to 100 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

65. An absorbent article as in Claim 63, said bond elements of said first sub-array of bond elements alternating along the length, and on opposing side edges, of the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 75 percent, up to 90 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

66. An absorbent article as in Claim 63, said bond elements of said first sub-array of bond elements alternating along the length, and on opposing side edges, of

the bond pattern, an imaginary contact line spanning the width of the bond pattern at a given locus along the length of the bond pattern which intersects a bond element of said first sub-array of bond elements on a given side of the bond pattern, also including on the opposing side of the bond pattern, a said outwardly-disposed portion of a respective said leg of the corresponding bond element of said second sub-array of bond elements, such that the distance between distal ends of the most remote ones of the bond elements along the respective imaginary contact line spanning the width of the bond pattern represents at least about 80 percent, up to 85 percent, of the width of the bond pattern, whereby the outwardly-disposed portions of the respective said legs provide balancing support on opposing sides of the longitudinal axis from respective ones of said first sub-array of bond elements or opposing ones of said second sub-array of bond elements during formation of the bond pattern.

67. An absorbent article as in Claim 63 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

68. An absorbent article as in Claim 63 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

69. An absorbent article as in Claim 63 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

70. An absorbent article as in Claim 63 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

72. An absorbent article as in Claim 63 wherein ones of said second sub-array of bond elements extend from loci proximate the side edges to loci proximate the longitudinal axis.

73. An absorbent article having a front portion and a rear portion, and a crotch portion extending between said front portion and said rear portion, said absorbent article comprising:

(a) a first flexible sheet material having first and second opposing major surfaces, the first and second major surfaces defining a first overall area of said first flexible sheet material, and a first web interior between the first and second major surfaces;

(b) a second flexible sheet material having third and fourth opposing major surfaces, the third and fourth major surfaces defining a second overall area of said second flexible sheet material, and a second web interior between the third and fourth major surfaces;

(c) a multiplicity of bond elements defining bonds bonding said first and second flexible sheet materials to each other in a bond pattern, and

(d) an absorbent core disposed adjacent at least one of said first and said second flexible sheet materials,

the bond pattern having a pattern length, and first and second side edges, the pattern length and the side edges, in combination, defining a third area within which the bond pattern is formed, the third area being smaller than at least one of the first and second areas of the respective first and second flexible sheet materials such that a portion of at least one of the first and second areas of respective said first and second flexible sheet materials is outside the bond pattern, the bond pattern having a bond pattern interior between the first and second side edges, and a pattern width between the first and second side edges, and a central longitudinal axis,

the bond pattern comprising an array of separate, distinct, and spaced elongate bond elements in a repeating arrangement affixing said first and second flexible sheet materials to each other,

(e) as ones of said bond elements, a first sub-array of longitudinally-oriented separate, distinct, and spaced bond elements disposed along the length of, and proximate the side edges of, the bond pattern, and

(f) as ones of said bond elements, a second sub-array of longitudinally-oriented separate, distinct, and spaced bond elements spaced along the length of the bond pattern, inwardly of the side edges of the bond pattern and generally inwardly of said first sub-array of bond elements, respective ones of said second sub-array of bond elements having first ends disposed on the interior of the bond pattern, respective ones of said second sub-array of bond elements extending to second ends adjacent the side edges of the bond pattern between respective ones of said first sub-array of bond elements.

74. An absorbent article as in Claim 73 wherein bonds corresponding to said bond elements are formed by application of thermal energy to at least one of said first and second flexible sheet materials.

75. An absorbent article as in Claim 73 wherein bonds corresponding to said bond elements are formed by application of ultrasonic-frequency energy to at least one of said first and second flexible sheet materials.

76. An absorbent article as in Claim 73 wherein at least one of said first and said second flexible sheet materials comprises polymeric material selected from the group consisting of polyolefins, polyesters, and polyamides, and copolymers, mixtures, and blends of said polymeric materials.

77. An absorbent article as in Claim 73 wherein at least one of said first and said second flexible sheet materials comprises a fibrous web having a multiplicity of randomly-spaced small openings extending from one of the respective major surfaces into the interior of the respective web.

Respectfully submitted,
Robert B. Dopp et al.

By: Thomas Wilhelm
Thomas D. Wilhelm
Attorney for Applicants
(Reg. No. 28,794)

Customer Number: 23482

May 19, 2000
Appleton, Wisconsin
920-831-0100
920-831-0101 FAX